

Replacement Lamp Market Trends



D&R International

- Tracking market trends due to:
 1. Increasing availability of LED replacement lamps
 2. Energy Independence & Security Act of 2007 (EISA)
- LED Lighting Facts Tracking Resources:
 1. Market Survey
 2. Product Snapshot

- February 2011 through February 2012
- Major retailers; nationwide sampling
- Tracking replacement lamp trends visible at retail outlets
 - Pricing
 - Product Availability
 - Product Attributes, such as lifetime
 - Merchandising
 - Signage

- Increasing lifetime –
1500 hour average versus 1000 hour
 - Packaging uses terms like
“Double Life” and “Twice the Life”
 - Longer life = Decreased lumens
- Multipacks dominate retail shelves
 - More likely to have longer lifetimes
- Almost all major retailers are still heavily promoting 60W and 100W options (except in California).



Market Survey: Halogens

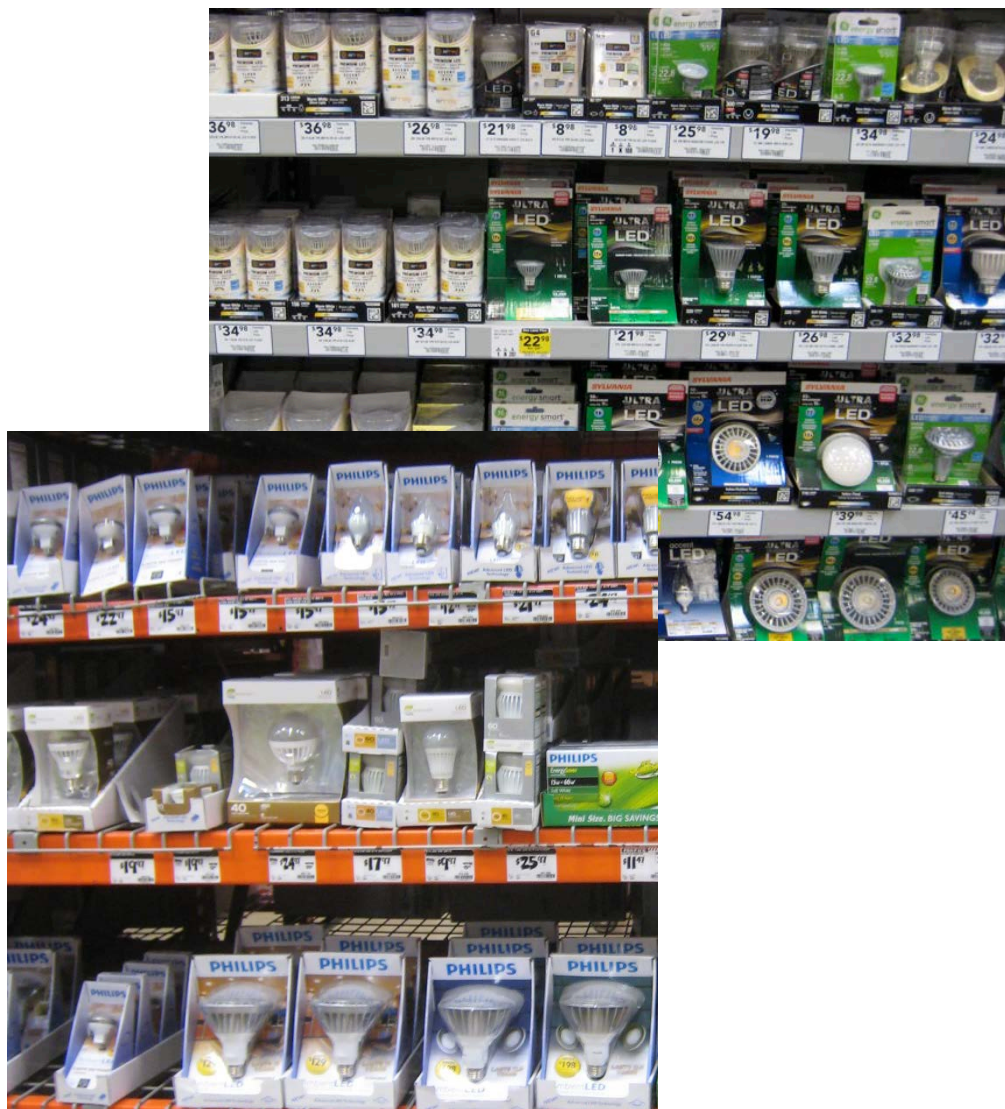
- Increased shelf space at major retailers for halogen incandescents that meet EISA requirements.
- Rated lifetime is 1000 hours
- Average price decreased slightly, from \$2.20 to \$1.90
- Product is sold in 2-packs
- Unique marketing at one retailer: new EISA-compliant halogen (72W) packaged with 100W incandescent



- Vast selection - CFL options are numerous and confusing
- Consumers may be overwhelmed with options; no advice on which bulbs to choose
- Prices seems to be increasing slightly
 - Difficult to assess pricing changes due to various CFL options (colors, package sizes, etc.)
- Multipacks are widely available



- Expanding LED lamp selection
 - More shelf space
 - More omnidirectional
 - More 60W replacements
- Not all major retailers carry a large selection of LED lamps
- Tend to be merchandised with or near CFLs
- Mostly single-packs available
- Prices are decreasing
- Despite high prices, LEDs appear to be selling



- Limited education/signage about EISA
- Limited lumens education
- New FTC label is becoming more visible
 - Found more on EISA-compliant halogens

Did you know?
Incandescent bulbs are being phased out across the country.

¿Sabía usted? Las bombillas incandescentes están desapareciendo en todo el país.

NEW Dimmable LED Bulbs.
See for yourself.
¡NUEVAS bombillas LED regulables. Compáralas usted mismo.

15TH
ENERGY STAR[®] BULB

Lutron C.L. Dimmers—for DIMMABLE CFLs and LEDs
Save energy • add ambience • improve performance
¡Ahórrate energía • agrega ambiente • mejora el rendimiento

OLUTRON

Lumens: a new way to shop for light
Lúmenes: Una nueva forma de comprar luz

Choose your next light bulb for the brightness you want.
For the greatest savings, choose ENERGY STAR[®] light bulbs.
Elija su próxima bombilla para el brillo que desea.
Para tener enormes ahorros, escoga bombillas ENERGY STAR[®].

Lighting Facts Per Bulb

Brightness	870 lumens
Estimated Yearly Energy Cost	\$1.57
Based on 3 hrs/day, 11¢/kWh	
Cost depends on rates and use	
Life	5.5 years
Based on 3 hrs/day	
Light Appearance	Warm
2700 K	
Energy Used	13 watts

Lumen Series (Brightness)
Serie Lúmenes (brillo)

~450	~800	~1100	~1600
40	60	75	100

Traditional Incandescent Watts
Watts incandescentes tradicionales

U.S. DEPARTMENT OF ENERGY

Can't Find 100W Bulbs?

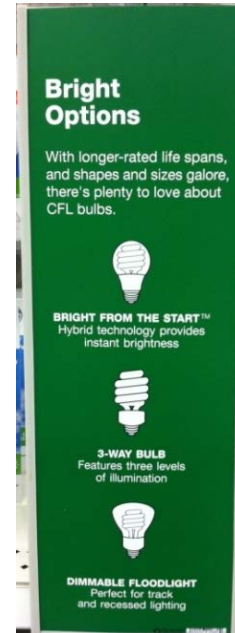
Federal legislation is calling for a phase-out of 100W incandescent bulbs.

The bright side? Target[®] has you covered with energy-saving replacement options that produce the same amount of light but use fewer watts.

The guide below will shed light on which bulb is right for you.

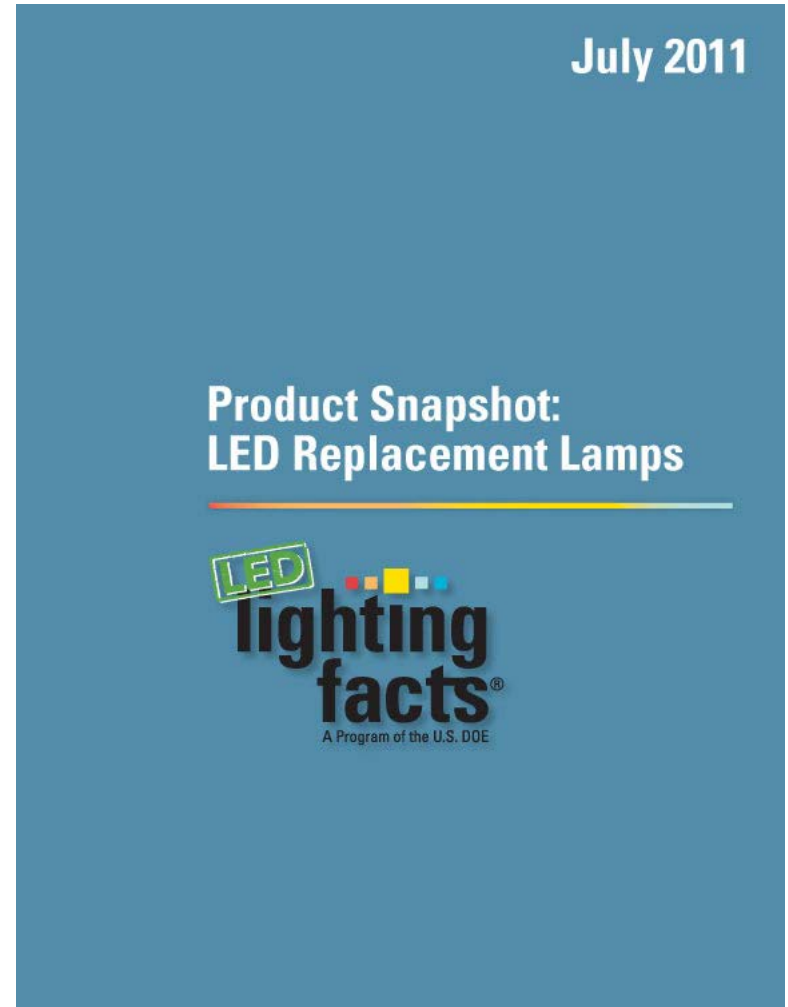
Incandescent wattage	CFL wattage	Halogen wattage
100	25-26	72

- Shelf space for halogens and LEDs is increasing
- LED and halogen prices decreased; CFL prices increased
- Lifetime findings:
 - Average lifetime of halogens, LEDs and CFLs have remained constant
 - “EISA compliant” halogens have consistently had 1000 hour lifetimes
 - Lifetime of A19 incandescent is increasing
 - Longer life = Decreased lumens

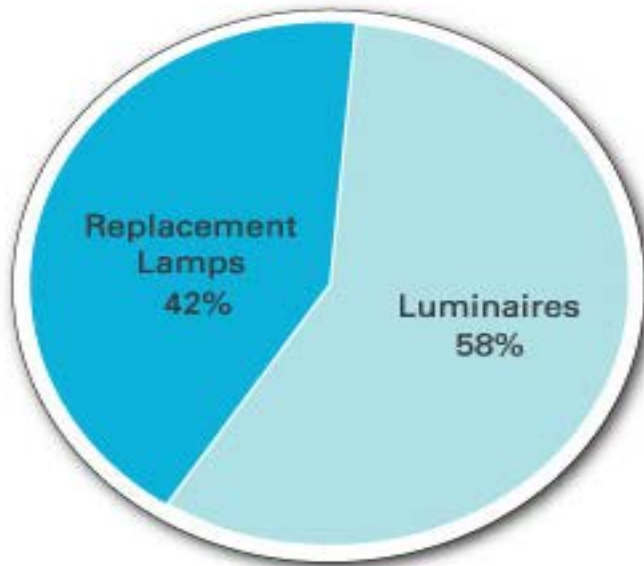


LED Lighting Facts Product Snapshot LED Replacement Lamps July 2012 Edition

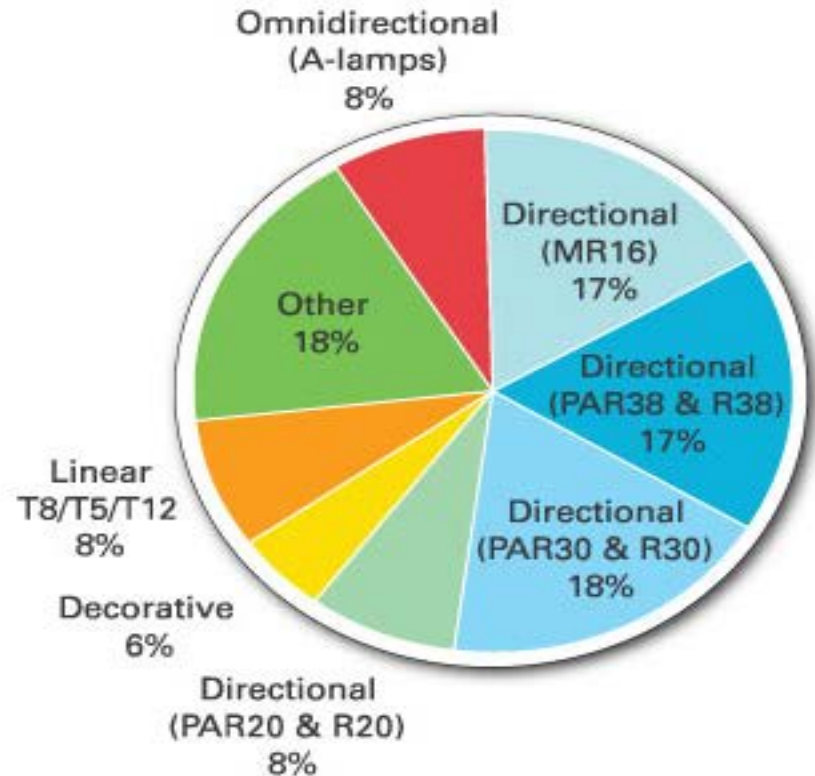
- Analysis of data from the LED Lighting Facts product list www.lightingfacts.com/products
- All products tested to LM-79 and the test results verified



Largest database of its kind



4,472 Total Approved Products



933 Replacement Lamps

Note: Replacement lamp percentages do not add up to exactly 100 due to rounding.

Source: DOE Lighting Facts Approved Products List, February 2011, www.lightingfacts.com/products

- **Lumen Output**
 - For products listed in 2011 or later
 - About 23% produce up to 450 lumens
 - 52% produce 450 lumens or higher (40W equivalency)
 - 23% meet or exceed 800 lumens (60W equivalency)
 - Less than 1% meet or exceed 1100 lumens (75W equivalency)
- **Lumen Output Projection**
 - 1600-lumen (100 W equivalency) A-lamps may be widely available in the market by late 2015 or 2016.
 - Based on LF projections and agreement with DOE Multi-Year Program Plan projections

- **Efficacy**
 - All meet the 2012-2014 EISA standards
 - 97% listed in 2011 or later meet the 2020 federal efficacy requirement of 45 lm/W
- **CCT and CRI**
 - About 36% offer warm-white (below 3000K) and high-CRI (80 or above) color performance
- **Retail Pricing**
 - LED A-lamp retail prices have been falling consistently, to approximately \$30 for an 800-lumen lamp as of January 2012
 - Prices are continuing to approach CFLs in terms of cost per lumen-hour.
 - Based on DOE MYPP projections and agreement with LF pricing data, LED cost per lumen-hour will reach CFL levels by 2016

- **Equivalency Levels**

- LED PAR and R lamp replacements are available at many incandescent and halogen reflector lamp equivalency levels (based on light output alone)
- Includes 90W PAR38, 70W PAR30, and 50W PAR20 levels
- LED MR-16 lamps are available at up to 40W halogen MR-16 light output levels

- **Efficacy and Savings**

- 60-80% savings in power consumption over improved-efficacy halogen lamps (after new efficacy levels are required this year)
- Savings possible with LED PAR and R lamp products that meet partners' light output and other performance requirements

- **CCT and CRI**

- About 83% perform at warm-white (2700K up to 3000K) or bright-white (3000K up to 4500K) CCT levels, with CRI values above 80

How do LED Replacement Lamps Really Perform?

- LED replacement lamp performance has improved since 2009
- Light output, in particular, has steadily increased for top-performing products in all categories
- LED products are now available at incandescent light output equivalency levels of 75W A-lamps, 90W PAR lamps, and 40W MR-16 lamps.
 - Retailers responding
 - Prices are dropping
- Still a high degree of variability in performance between products
 - Partners should continue to exercise caution when evaluating products

Thank you!

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